

Suggested Script with References

Slide 1



Slide 2

Diabetes: Prevention

Diabetes Prevention Program (DPP)

The DPP was a major clinical trial to determine whether diet and exercise or the oral diabetes drug metformin could prevent or delay the onset of type 2 diabetes

DPP Research Group. N Engl J Med 2002, Vol.346, No. 6. April 2007

- The Diabetes Prevention Program (DPP) was a major clinical trial (1996 - 2001) sponsored by the National Institutes of Health to determine whether diet and exercise or the oral diabetes drug metformin could prevent or delay the onset of type 2 diabetes.

Reference

Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002, Vol.346, No. 6.

Slide 3

Diabetes: Prevention

DPP Participants

Adults at high risk for type 2 diabetes

- Presence of IGT
- Mean age 51 years
- Mean body mass index (BMI) 34
- 68% women
- 45% minority groups
 - African Americans
 - Hispanic and Latino Americans
 - American Indians
 - Asian Americans and Pacific Islanders

DPP Research Group. N Engl J Med 2002, Vol.346, No. 6. April 2007

- The Diabetes Prevention Program (DPP) participants were adults who were at high risk for developing type 2 diabetes - all had impaired glucose tolerance (IGT).
- IGT is defined as a two-hour glucose level of 140 to 199 mg per dL after a person drinks a 75-gram glucose solution following an overnight 8 to 12 hour fast. The mean age of the participants was 51 years, and the mean body mass index (BMI) was 34.
- 68 percent of the participants were women.
- 45 percent of the participants were members of minority groups including:
 - African Americans
 - Hispanic and Latino Americans
 - American Indians
 - Asian Americans and Pacific Islanders.

Reference

See Slide 2.

Suggested Script with References

Slide 4

Diabetes: Prevention


DPP Methods

Lifestyle intervention
 5% to 7% weight reduction
 Healthy low-calorie, low-fat diet
 30 min. of physical activity, 5 days/week

Metformin
 Oral diabetes drug

Placebo

DPP Research Group. N Engl J Med 2002; Vol.346, No. 6. April 2007



The Diabetes Prevention Program (DPP) participants were randomly assigned to one of three interventions:

1. The intensive lifestyle modification program, where participants were encouraged to lose 5% to 7% of their bodyweight by following a healthy low-calorie, low-fat diet and by getting 30 minutes of physical activity, 5 days a week.
2. Standard lifestyle recommendations plus metformin, an oral diabetes drug.
3. Standard lifestyle recommendations plus placebo twice daily.

Reference

Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002, Vol.346, No. 6.

Slide 5


Diabetes: Prevention

DPP Methods

DPP Curriculum:
 Diet
 Exercise
 Behavior change modification

Taught one-on-one by case managers

DPP Research Group. N Engl J Med 2002; Vol.346, No. 6. April 2007



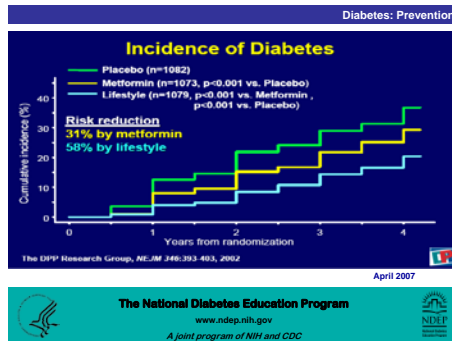
- Participants in the intensive lifestyle intervention of the Diabetes Prevention Program (DPP) followed a curriculum covering diet, exercise, and behavior modification that was designed to help them achieve diet, exercise, and behavior modification goals.
- The curriculum was taught by case managers on a one-to-one basis during the first 24 weeks after enrollment. It was flexible, culturally sensitive, and individualized. Subsequent individual sessions and group sessions with the case managers were designed to reinforce the behavioral changes.

Reference

See Slide 4.

Suggested Script with References

Slide 6



The clinical trial ended one year earlier than planned because the results were so clear:

- The lifestyle intervention group reduced their risk of developing diabetes by 58 percent.
- This powerful reduction in risk of diabetes was found in all subgroups, including men and women, the ethnic groups that made up 45 percent of participants, women with a history of gestational diabetes, and people age 60 and older.
- In fact, lifestyle changes worked particularly well for participants aged 60 and older—who as a group have nearly 20 percent prevalence of diabetes—reduced their risk of developing diabetes by 71 percent.
- Participants who took metformin reduced their risk of developing diabetes by 31 percent.
- Metformin was effective for both men and women, and was more effective in younger, heavier people—those 25 to 40 years old with a BMI of 36 (about 50 to 80 pounds overweight).

Reference

Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002, Vol.346, No. 6.

Slide 7

Diabetes Prevention

Type 2 diabetes prevention is:

- **PROVEN**
- **POSSIBLE**, and
- **POWERFUL**

April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- The Diabetes Prevention Program (DPP) showed that type 2 diabetes prevention is proven, possible, and powerful.

Suggested Script with References

Slide 8

Diabetes: Prevention

What is Pre-diabetes?

Pre-diabetes - blood glucose > normal, but not high enough for diagnoses of diabetes

54 million U.S. adults age > 20 have **pre-diabetes**

Increases risk for type 2 diabetes and CVD

NIDDK, National Diabetes Statistics fact sheet. HHS, NIH, 2005. April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- Pre-diabetes means blood glucose levels are higher than normal, but not high enough to be diagnosed with diabetes.
- At least 54 million U.S. adults age 20 and older have pre-diabetes.
- Pre-diabetes raises the risk of developing type 2 diabetes and cardiovascular disease (CVD), including heart disease and stroke.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: General information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

Slide 9

Diabetes: Prevention

What is Pre-diabetes?

Pre-diabetes includes IFG & IGT

Prior to type 2, most people have pre-diabetes

Most people with pre-diabetes develop type 2 diabetes within 10 years

Progression to diabetes is NOT inevitable

NIDDK, National Diabetes Statistics fact sheet. HHS, NIH, 2005. April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- Pre-diabetes includes impaired fasting glucose (IFG) and impaired glucose tolerance (IGT).
- IGT is defined as a two-hour glucose level of 140 to 199 mg per dL after a person drinks a 75-gram glucose solution following an overnight 8 to 12 hour fast.
- IFG is defined as a glucose level of 100 to 125 mg per dL after an overnight 8 to 12 hour fast.
- Prior to developing type 2 diabetes, people almost always have pre-diabetes.
- Studies indicate that most people with pre-diabetes develop type 2 diabetes within 10 years.
- It is important to note that progression to type 2 diabetes among people with pre-diabetes is not inevitable – as was found in the Diabetes Prevention Program (DPP).

Reference

See Slide 8.

Suggested Script with References

Slide 10

Diabetes: Prevention

Risk Factors for Pre-diabetes

Older age

- Age 45 and older

Overweight

- BMI ≥ 25 (≥ 23 if Asian American or ≥ 26 if Pacific Islander)

DPP Research Group. N Engl J Med 2002, Vol.346, No. 6.

April 2007



- The risk of pre-diabetes increases with age.
- People who are overweight—defined as a body mass index (BMI) of ≥ 25 (≥ 23 if Asian American or ≥ 26 if Pacific Islander)—are also at an increased risk for pre-diabetes.

Reference

Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002, Vol.346, No. 6.

Slide 11

Diabetes: Prevention

Other Factors for Pre-diabetes

Hypertension

PCOS

Abnormal lipid levels

Previous IGT or IFG

Family history of diabetes

Inactive lifestyle

Race/ethnicity

History of gestational diabetes

History of vascular disease

Signs of insulin resistance

DPP Research Group. N Engl J Med 2002, Vol.346, No. 6.

April 2007



In addition to age and weight, the following increase the risk for pre-diabetes:

- Blood pressure $> 140/90$ mm/Hg.
- Abnormal lipid levels – HDL cholesterol < 40 mg/dL for men and < 50 mg/dL for women; triglyceride level ≥ 250 mg/dL for both men and women.
- Family history of diabetes.
- Race/ethnicity – African Americans, Hispanic/Latino Americans, American Indians, and Asian Americans and Pacific Islanders are at particularly high risk for pre-diabetes and diabetes.
- History of gestational diabetes.
- History of vascular disease.
- Signs of insulin resistance such as acanthosis nigricans.
- Polycystic ovarian syndrome or PCOS.
- Impaired Glucose Tolerance or Impaired Fasting Glucose on previous testing.
- Inactive lifestyle – being physically active less than 3 times a week.

Reference

See Slide 10.

Suggested Script with References

Slide 12

Diabetes: Prevention

Testing Recommendations for People at High Risk

Consider testing plasma glucose if a person is:

- Age 45 or older and overweight
- Younger than 45, overweight, with any additional risk factor

Repeat testing at 3-year intervals

Obtain FPG or 2-hour plasma glucose post 75-g glucose challenge after overnight 8 to 12 hr fast

American Diabetes Association. Diabetes Care 2007; 30(Suppl. 1):S4-41. April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- Patients should be assessed for pre-diabetes and monitored for disease progression.
- High-risk people should be identified based upon known risk factors.
- Testing of plasma glucose should be considered if a person is:
 - Age 45 or older and overweight
 - Younger than 45, overweight, with any risk factor.
- Testing should be repeated at 3-year intervals.
- A Fasting Plasma Glucose Test (FPG) or a 2-hour plasma glucose post 75-g glucose challenge after an overnight 8 to 12 hour fast should be obtained.

Reference

American Diabetes Association. Standards of Medical Care in Diabetes. Diabetes Care 2007; 30 (Suppl. 1):S4-41.

Slide 13

Diabetes: Prevention

Diagnostic Criteria for Pre-diabetes and Diabetes

	Fasting Plasma Glucose Test (FPG)	2-Hour Oral Glucose Tolerance Test (OGTT)
Normal	Below 100 mg/dl	Below 140 mg/dl
Pre-diabetes	100-125 mg/dl (IFG)	140-199 mg/dl (IGT)
Diabetes	126 mg/dl or above	200 mg/dl or above

American Diabetes Association. Diabetes Care 2007; 30(Suppl. 1):S4-41. April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

This table shows the criteria used by health care professionals to diagnose pre-diabetes as either impaired fasting glucose (IFG) or impaired glucose tolerance (IGT).

The Fasting Plasma Glucose Test (FPG)

measures a person's blood glucose after an overnight fast (8 to 12 hours).

The 2-Hour Oral Glucose Tolerance Test (OGTT)

is performed after an overnight 8 to 12 hour fast and measures a person's plasma 2 hours after drinking a 75-gram glucose solution.

Reference

See Slide 12.

Slide 14

Diabetes: Prevention

Diabetes Prevention Program Outcomes Study (DPPOS)

Long-term follow-up to the DPP

Impact of lifestyle intervention on the incidence of CVD complications

April 2007

The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- The Diabetes Prevention Program Outcomes Study – or the DPPOS (2002 - present) – is a follow-up to the Diabetes Prevention Program (DPP).
- Most of the DPP participants continue to be followed closely in the DPPOS to examine the longer-term impact of the original treatment interventions. This will provide further information regarding the impact of lifestyle intervention on the incidence of cardiovascular disease (CVD) complications.

Suggested Script with References

Slide 15

Diabetes: Prevention

Diabetes Prevention Program Outcomes Study (DPPOS)

Preliminary results

- 8% of participants with pre-diabetes had diabetic eye disease
- 12% of participants who developed type 2 diabetes during the DPP had diabetic eye disease

April 2007


The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- Preliminary results of the Diabetes Prevention Program Outcomes Study (DPPOS) found that nearly 8 percent of participants with pre-diabetes in the Diabetes Prevention Program (DPP) had diabetic eye disease (retinopathy).
- Diabetic eye disease was also seen in 12 percent of participants with type 2 diabetes who developed diabetes during the DPP.
- These early findings of the DPPOS reinforce the recommendation that patients with pre-diabetes or newly diagnosed type 2 diabetes should be screened for retinopathy.

Slide 16

Diabetes: Prevention

NDEP Materials



April 2007


The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- The National Diabetes Education Program promotes critically important messages and offers a wide variety of education materials for people with and at risk for type 2 diabetes.
- Based on the Diabetes Prevention Program (DPP) findings, NDEP's *Small Steps. Big Rewards. Prevent type 2 Diabetes* campaign was launched in 2002 and encourages health care professionals and people at risk for diabetes to take action to prevent or delay the onset of the disease through modest changes in lifestyle, i.e. small steps.

Slide 17

Diabetes: Prevention

GAME PLAN



Patient Materials

April 2007

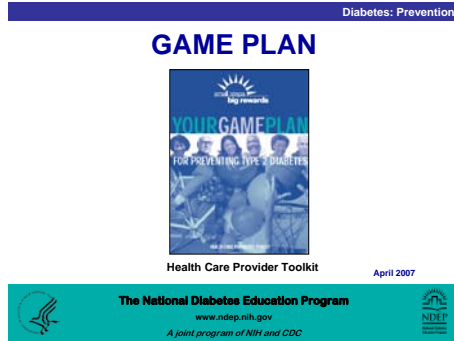
The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC

- NDEP adapted the Diabetes Prevention Program (DPP) curriculum into a product called *Your GAME PLAN to Prevent type 2 Diabetes* for patients – a booklet that helps people at risk for diabetes take steps to prevent the disease. It includes information about setting goals for physical activity and healthy eating and tracking progress. The booklet is packaged with the following:
- A Fat and Calorie Counter:** This booklet can be used to look up the calories and fat grams in hundreds of food and drink items, including restaurant, ethnic, and regional foods.
- A Food and Activity Tracker:** The DPP showed that people who kept a daily log of their food intake (including calories and fat grams) and physical activity were more likely to lose weight than those who did not.

All of NDEP's materials are copyright free and may be reprinted. Organizations may add their logos.

Suggested Script with References

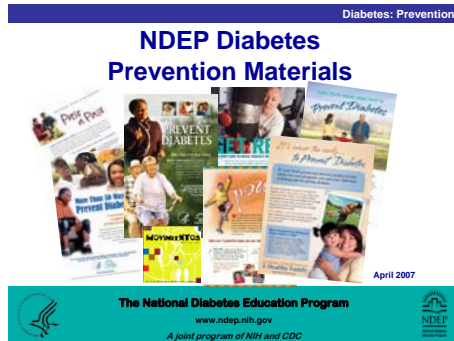
Slide 18



- NDEP also offers a toolkit for health care professionals that features evidence-based tools and techniques to help patients start their own personalized diabetes prevention program, including:
- A decision pathway to diagnose and treat pre-diabetes,
- Proven strategies to counsel and motivate patients,
- Office poster, and
- Copier-ready patient education handouts.

All of NDEP's materials are copyright free and may be reprinted. Organizations may add their logos.

Slide 19



- The *Small Steps. Big Rewards.* campaign also offers materials for high-risk audiences – and in multiple languages from Spanish to Samoan.

The high risk campaigns are:

- *Get Real* for general audiences
- *More Than 50 Ways to Prevent Diabetes* for African Americans
- *We Have the Power to Prevent Diabetes* for American Indians and Alaska Natives
- *Two Reasons I Find Time to Prevent Diabetes...My Future and Theirs* for Asian Americans and Pacific Islanders – in 15 Asian languages
- *Prevent Diabetes...Paso a Paso* for Hispanic and Latino Americans
- *It's Not Too Late to Prevent Diabetes* for older adults
- *It's Never Too Early to Prevent Diabetes* for women with a history of gestational diabetes and their children
- Each tip sheet contains easy-to-read tips for weight loss through physical activity and following a lower fat, lower calorie eating plan.

All of NDEP's materials are copyright free and may be reprinted. Organizations may add their logos.

Suggested Script with References


Slide 20

Diabetes: Prevention


Other NDEP Campaign Tools
at www.ndep.nih.gov

- TV, radio, and print PSAs
- Sample feature articles
- Sample press releases and media advisories
- Fact sheets
- Web buttons/blurbs
- NDEP logos and banners

April 2007



The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC



The NDEP also offers promotional tools that compliment the educational materials shown on the previous slide. Tools include:

- TV, radio, and print public service announcements
- Sample feature articles
- Sample press releases and media advisories
- Fact sheets
- Web buttons/blurbs, and
- NDEP logos and banners.

These and other campaign tools can be found by going to the NDEP website at www.ndep.nih.gov and clicking on "campaign tools."

All of NDEP's materials are copyright free and may be reprinted. Organizations may add their logos.

Slide 21


Diabetes: Prevention

For more information about NDEP
or to order or download free
materials:


Call 1-800-438-5383
or
Visit www.ndep.nih.gov

The U.S. Department of Health and Human Services' National Diabetes Education Program is jointly sponsored by the National Institutes of Health and the Centers for Disease Control and Prevention with the support of more than 200 partner organizations.

April 2007



The National Diabetes Education Program
www.ndep.nih.gov
A joint program of NIH and CDC



For more information about NDEP or to order or download free materials:

Call 1-800-438-5383 or visit www.ndep.nih.gov. Both English and Spanish-speaking telephone operators are available.

All of NDEP's materials are copyright free and may be reprinted. Organizations may add their logos.